

phase P2, the polymer dispersion obtained by free-radical aqueous emulsion polymerization comprising the following steps:

- i) polymerization of a first monomer charge M1 to give a polymer phase P1 having a theoretical glass transition temperature $T_g^{(1)}$ (according to Fox) and
- ii) polymerization of a second monomer charge M2 to give a polymer phase P2 having a theoretical glass transition temperature $T_g^{(2)}$ (according to Fox) which is at least 10 kelvins above $T_g^{(1)}$ in the aqueous dispersion of the polymer phase P1, at least one chain transfer reagent being used either in the polymerization of the monomer charge M1 or in the polymerization of the monomer charge M2.

Please cancel Claims 2 and 3.

Please amend Claims 10 and 13-18 as follows:

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10. (Amended) A process for preparing an aqueous polymer dispersion as defined in claim 1 by free-radical aqueous emulsion polymerization comprising the following steps:

- i) polymerization of a first monomer charge M1 to give a polymer phase P1 having a theoretical glass transition temperature $T_g^{(1)}$ (according to Fox) and
- ii) polymerization of a second monomer charge M2 to give a polymer phase P2 having a theoretical glass transition temperature $T_g^{(2)}$ (according to Fox) which is at least 10 kelvins above $T_g^{(1)}$ in the aqueous dispersion of the polymer phase P1, at least one chain transfer reagent being used either in the polymerization of the monomer charge M1 or in the polymerization of the monomer charge M2.

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13. (Amended) An aqueous polymer dispersion as claimed in claim 1, wherein the polymer phase obtained in the presence of the chain transfer agent has a weight-average molecular weight in the range from 20,000 to 200,000, determined by GPC.

14. (Amended) An aqueous polymer dispersion as claimed in claim 13, wherein the polymer phase obtained in the presence of the chain transfer agent has a weight-average molecular weight in the range from 30,000 to 100,000, determined by GPC.

15. (Amended) An aqueous polymer dispersion as claimed in claim 1, wherein the polymer phase obtained in the absence of the chain transfer reagent has a weight-average molecular weight of above 800,000, determined by GPC.

16. (Amended) An aqueous polymer dispersion as claimed in claim 15, wherein the polymer phase obtained in the absence of the chain transfer reagent has a weight-average molecular weight of above 1,000,000, determined by GPC.

17. (Amended) An aqueous polymer dispersion as claimed in claim 13, wherein the polymer phase obtained in the absence of the chain transfer reagent has a weight-average molecular weight of above 800,000, determined by GPC.

18. (Amended) An aqueous polymer dispersion as claimed in claim 14, wherein the polymer phase obtained in the absence of the chain transfer reagent has a weight-average molecular weight of above 1,000,000, determined by GPC.

Please add the following new Claims 19-29:

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19. (New) An aqueous polymer dispersion as claimed in claim 1, wherein the weight ratio of the monomers present in the monomer charge M1 to the monomers present in the monomer charge M2 is in the range from 2:1 to 5:1.

20. (New) The aqueous polymer dispersion as claimed in claim 1, wherein the chain transfer reagent is used in the polymerization of the monomer charge M1.

21. (New) The aqueous polymer dispersion as claimed in claim 20, wherein the chain transfer reagent is used in an amount of from 0.2 to 2% by weight, based on the weight of the monomers contained in the monomer charge M1.

22. (New) An aqueous polymer dispersion as claimed in claim 20, wherein the weight ratio of the monomers present in the monomer charge M1 to the monomers present in the monomer charge M2 is in the range from 2:1 to 5:1.

23. (New) The process as claimed in claim 10, wherein the chain transfer reagent is used in the polymerization of the monomer charge M1.

24. (New) The process as claimed in claim 23, wherein the chain transfer reagent is used in an amount of from 0.2 to 2% by weight, based on the weight of the monomers contained in the monomer charge M1.

25. (New) The process as claimed in claim 10, wherein the monomer charge M2 contains at least 80% by weight, based on the overall weight of the monomers contained in the monomer charge M2, of one or more C_1 - C_4 alkyl methacrylates.

26. (New) The process as claimed in claim 10, wherein the monomer charge M1 comprises:

- from 30 to 80% by weight of at least one monomer M1a selected from the C_1 - C_{10} alkyl esters of acrylic acid,
- from 20 to 60% by weight of at least one further monomer M1b selected from the C_1 - C_4 alkyl esters of methacrylic acid and from vinylaromatic monomers, and
- from 0 to 20% by weight of one or more ethylenically unsaturated monomers different from but polymerizable with the monomers M1a and M1b.

27. (New) The process as claimed in claim 10, wherein the monomer charges M1 and M2 comprise in total from $0.1 < 3\%$ by weight, based on the overall weight of the monomers contained in the monomer charges M1 and M2, of at least one monoethylenically unsaturated monomer having an acid group, or salt thereof.

28. (New) The process as claimed in claim 10, wherein the weight ratio of the monomers present in the monomer charge M1 to the monomers present in the monomer charge M2 is in the range from 2:1 to 5:1.

29. (New) The process as claimed in claim 23, wherein the weight ratio of the monomers present in the monomer charge M1 to the monomers present in the monomer charge M2 is in the range from 2:1 to 5:1.

DISCUSSION OF THE AMENDMENT

Claim 1 has been amended by incorporating the subject matter of Claim 2 therein; Claims 2 and 3 have been canceled. Claim 1 additionally, and each of Claims 13-18, have been amended by inserting the word --phase-- after "polymer", as suggested by the Examiner during the below-discussed interview.

New Claims 19-29 have been added. Claim 19 is supported in the specification at page 4, line 44 through page 5, line 3. Claims 20 and 21 are supported in the specification at page 6, lines 38-42. Claims 22, 28 and 29 contain the features of Claim 19. Claims 23 and 24 correspond to Claims 20 and 21. Claims 25-27 correspond to original Claims 6-8.

No new matter has been added by the above amendment. Claims 1 and 4-29 are now pending in the application.